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ABSTRACT

Courses designed to enhance the study skills in students at Plymouth Polytechnic and Kingston Polytechnic are outlined and examined. In the case of Plymouth Polytechnic, the research was centered on an evaluation of a program from Sussex University; the Kingston Polytechnic research included the course design. The Sussex University Advanced Learning and Reading Course is examined from a component skills approach to study methods. Three major shortcomings are revealed, in that the course does not adapt to students' pre-existing skills and learning styles, does not enable students to transfer learned subskills to novel studying tasks, and does not accommodate to the transient disruption in studying performance attendant on the acquisition of new skills. A before-and-after study of the course offered to a mixed-subject group of degree and diploma students at Plymouth Polytechnic revealed that most of the methods and techniques presented in the course led to improvements for only a limited set of studying tasks on a specific class of materials within particular subject areas. A brief description of the first two study skills courses offered to first-year students at Kingston Polytechnic is given. This description includes the criticisms and feedback that led to the current course in operation at Kingston, which is also described. (Author/SPG)

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Occasional Paper 4

The Development and Evaluation of Study Skills Courses for Students in Higher Education

Liz Rees, Fraser Reid

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The Development and Evaluation of Study Skills Courses for Students in Higher Education

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Introduction

In this joint Occasional Paper, two researchers outline and examine courses designed to enhance study skills in the students within their respective institutions. In the case of Kingston Polytechnic, the research included the design of the course, while in the case of Plymouth Polytechnic, the research was centered upon an evaluation of a programme which was bought in from Sussex University.

A Preliminary Evaluation of the Advanced Learning and Reading Course

by Fraser Reid (Plymouth Polytechnic)

Abstract

The Sussex University Advanced Learning and Reading Course is examined from a component skills approach to study methods, with particular reference to FE/HE students. Three major shortcomings are revealed, in that the course (i) does not adapt to students' pre-existing skills and learning styles, (ii) does not enable students to transfer learned subskills to novel studying tasks, and (iii) does not accommodate to the transient disruption in studying performance attendant on the acquisition of new skills. A before-and-after study of the course offered to a mixed-subject group of degree and diploma students at Plymouth Polytechnic revealed that most of the methods and techniques presented in the course led to improvements for only a limited set of studying tasks on a specific class of materials within particular subject areas. In addition, improvements on one component skill did not necessarily correspond with improvements on another, and in some cases there was evidence for a decline in studying performance on several major component skills. It is argued that these findings reflect short-comings in the design of the course, and some methods for improving the effectiveness of the course are suggested.

In these times of economies and cutbacks a critical eye has been passed over the educational scene, concluding that the process of teaching is not as good value for money as it might be. Whilst we may protest that the criteria of efficiency usually employed, namely the criteria of industrial productivity, have no place in the classroom or the lecture theatre, this critical interest has turned our attention to areas which have been so frequently taken for granted; the activities of teachers and learners in higher education. For some years however, teaching has been treated as a complex skill, and a variety of modern technologies usefully employed in training teachers. But what of the receiving end, the skills possessed by learners?

The purpose of this paper is to outline, not so much the skills involved, but a way of looking at the learning activities of students, and the merits of courses purporting to develop studying skills. For a number of years now Plymouth Polytechnic has been offering to students the Sussex University Advanced Learning and Reading course (1), and it is worth noting that amongst students there is a sizeable demand for a course of this sort. In fact, over the last two terms 115 students have volunteered for this course. We offer the course every term, and decided last term to attempt some preliminary evaluation of its merits. Although our programme of testing is still in progress, some remarks can be made at this stage.

Before outlining the findings of this programme I would like to discuss what a course of this sort seeks to achieve. In very general terms, this particular course shares with the more popular speed reading courses the aims of developing to a fairly high level of competence the reading and learning skills of students in particular. The usual approach is to concentrate to varying degrees on three aspects in the course design; (i) an analysis of the studying task into a variety of component subskills, in a similar fashion, for example, to the time-and-motion study of a lathe-operator's activities, (ii) a programme of fairly intensive training in each of the subskills independently, and (iii) usually, but by no means always, an attempt to integrate these component subskills into an organised and complete sequence of operations.

In designing such a programme the trainer either implicitly or explicitly knows that more is involved in, say, turning a casting than a simple chain of operations, each triggering the next until the sequence has been completed. He will know that a skilled lathe-operator adapts to continual variations in his task, and that the most important part of learning the skill is to acquire and refine a perceptual system capable of making fine discriminations so as to precisely organise his movements. Accordingly, he will not only analyse the operation of a lathe into a hierarchy of subgoals, he will also be at pains to ensure that his apprentices develop adequate criteria to tell whether or not each subgoal has been achieved, and what must be done if they have not.

The Advanced Learning and Reading Course has, to some extent, followed this pattern. The process of studying is analysed into a series of component parts — notemaking, essay writing, reading, memorising, timetabling, and so on — each of these further subdivided into a series of methods and techniques. Training in most of these methods does entail that the student develop means for assessing whether or not he is achieving the desired outcomes. Finally, the course offers an overall plan of the studying process in an attempt to coordinate the application of the methods.

As an example of this programme applied to the studying process the first lesson of the course is concerned with notemaking in the preparation of material for an essay or speech. This subtask is in essence addressed to problems of directed recall, deriving from Buzan's conceptual analysis of study problems as stemming from the overlearned habit, to use his words, "of linearly processing written information". Whilst this may adequately describe the activities many of us engage in when preparing material in this way, we have found that the issue of directed recall may be couched more realistically in the terms of Rosen (2), as an overdeveloped and inhibiting "sense of audience". Immediately prior to this lecture, students complete an exercise in making notes in their usual way as a preparation for a speech on a topic of their own choice.

In his lecture preamble, Buzan predicts that many students'

notes will have taken the form of a linearly ordered set of ideas which, he argues, may limit both the retrieval of additional information and the construction of alternative relationships within the set. As an alternative, Buzan outlines the "creative pattern" method of suspending critical judgement whilst ideas and their inter-relationships are jotted down as rapidly as possible. By externalising alternative interpretations, the student's choice of a final ordering is made both simpler and more rigorous.

Following this lecture, students go on to apply the "creative pattern" method in a number of contexts, developing as they do so the ability to assess their output in terms of continuity, volume and diversity of recalled material. Later in the course this method is coordinated with reading, essay writing and exam techniques, presented and practised in a similar way.

Having considered this one element from the course, I would like to discuss with reference to this method a number of criticisms of courses of this kind. Following that, I shall outline the findings of ou preliminary investigation of the course to check whether these criticisms are in any way justified.

In common with many speed reading courses, the Advanced Learning and Reading course does not at first sight lead to many lasting effects in study skills. Whilst our investigations of the course are at too early a stage to qualify this claim, a number of students from earlier courses report that they have resumed their pre-course methods, and studies of some reading courses have indicated that this is fairly common (3). Moreover, the methods presented appear to be appropriate to some students and not others, for some course subjects and not others. Finally, many students appear to experience the course as disruptive to their studies, and cease to actively experiment with the methods.

These observations lead me to formulate three classes of, hopefully remediable, criticism; (i) that the course does not at present meet individual student requirements in terms of existing skills and learning styles, (ii) that for a number of reasons the course

does not seem at present to enable the student to flexibly adapt his component skills to the varied learning tasks that confront him in his course of study, and (iii) that the course seems not to make allowance for the inevitable but transient decline in performance that accompanies the acquisition or modification of studying skills. My first criticism is based on the well-documented research in cognitive style and learning strategy by Bruner (4), Gardner (5), Witkin (6), and Pask and Scott (7) amongst others, and of studies of training in reading-for-learning by Thomas & Augstein (8) and Jahoda and Thomas (9). In the first case, these studies suggest that students vary in the typical ways in which they take in information, what they do with it, and how they organise it. These styles are relatively deep-seated, and it has been demonstrated that performance with material presented in a form that is mismatched to the learner's strategies is seriously impaired (7). Clearly, a method of directed recall such as the "creative pattern" will be appropriate only for those students whose learning style parallels the operations involved in this method.

Secondly, Thomas and Augstein (3) note that in the case of reading most students possess adequate operational plans for achieving high-level learning outcomes. Training did not so much introduce them to new reading methods as enable them to formulate the learning tasks that confronted them in such a way as to align their performance with their stated purposes in reading. In this sense, some students may be competent at directed recall, but unable to precisely identify when and where such a skill might be appropriate, or to adapt the skill to suit the demands of the task.

The second criticism draws on the work of George Miller and his associates (10). They argue that for a learner to adequately acquire a skill and be able to transfer it to a range of situations he must not only form an internal plan of the skill for himself, he must also construct a "meta-plan" from which he may derive an infinite variety of "sub-plans", each suited to the unique learning tasks that confront him. A failure to do so would leave the learner with a skill appropriate to but a limited number of situations, unable to meet the demands of many

Tasks that he may encounter. This
predicament would naturally

lead him to revert to those metaplans which he has already formulated, namely those that existed prior to training. It is easy to see how this situation arises with "creative pattern" methods, since very little time is given over to demonstrating problems of directed recall in the context of other processes. For this reason, we have concentrated in courses being offered at present on linking directed recall in preparation notes with the effects of the internalised "sense of audience"(1) in channelling thinking in general. In some situations, this "channelling of thought" may become pernicious, and severely restrict the learner's usual performance. From this point of view, it has seemed to us important to demonstrate this effect in such a way that the student may achieve some control over his own recall processes. For instance, we have introduced a number of exercises that highlight the effects of a real audience in spontaneous "free association" games, of the merits of suspending critical appraisal in "brainstorming" techniques, and so on.

The final criticism again stems from Miller's work in that to construct a more effective plan the learner must dissemble existing plans, often at many levels of complexity, before recombining them into an alternative structure. He will, as it were, be at some stage caught between plans. Invariably this leads to sudden and marked drops in performance, a period of depression, disinterest, anxiety, and feelings of hopelessness. At the point where the distance forward is equal to the distance back, there are very strong temptations to reinstate old plans and to reject new methods on the basis that they can be seen not to work. The only solution to this situation is perseverance in the learner, and tolerance and support from the trainer. With the "creative pattern" method it is often the case that students do not apply it sufficiently to get beyond the mechanics of the method, or apply it in some rather than other, perhaps more crucial contexts. In both these cases students usually report that the method does not seem to work for them, or that it does not apply to their subject area.

To summarise, these points are not so much a criticism of the methods presented as a criticism of the theory of skill acquisition

and modification underlying the design of the course. My view is that the course as a whole may be seen as an attempt, to use Miller's terms, to substitute the trainer's plan for the student's own, and then to get him to execute it as if it were his own. To be successful in the terms we have discussed, a course of this sort must not only help them evaluate their learning outcomes, but must focus considerable effort on helping students to become aware of their purposes in studying, to assess whether their learning outcomes are consistent with these purposes, finally to develop a metaplan for reviewing the strategies and skills they use.

As a test of some of these criticisms, we carried out a programme of evaluation over the course offered to students last term. Forty-five students volunteered, of whom twenty-six completed the five lessons. With only two exceptions, the students were all in their first year studying a wide range of subjects from Architecture to Nautical Studies. By far the most represented group, however, were the Environmental and Biological Sciences.

The data we collected comprised performance before and after the course on tests of comprehension of two short extracts of equivalent length (approximately 1500 words) from recent articles in the Science Journal, and responses to a sixty-item questionnaire completed at the same time (see Appendix). On each of the two testing occasions, prior to and after the course, each student studied one of the passages and made what notes he wished over a ten-minute period. These notes were then collected and the students completed the questionnaire. Following this each student completed from memory an immediate test of 12 multiple-choice questions on the passage he had read, and one week later a delayed test of a second set of 12 multiple-choice questions. All tests were matched and comprised five questions at the specific-knowledge level of Bloom's taxonomy of educational objectives (11) (e.g. "What is an octal digit.' '), five questions at the translation level (e.g. "What does the ordination of OTU's mean?''), and two questions at the elaboration level (e.g. "What implications has the chunking hypothesis for the Advanced Learning and Reading Course?").

Immediately after completing the course each student followed the same procedure on the second passage, and completed the questionnaire for the second time. A balanced AB/BA design was used both for the passages and for the immediate and delayed tests, forming four conditions to which students were randomly assigned. Complete sets of tests and questionnaires were obtained for 20 students, five for each of the four conditions.

Turning first to performance on the comprehension tests, both passages proved fairly difficult, obtaining an overall 42.6 per cent items correct. However, the breakdown of scores by question type on the immediate and delayed tests in Table I show an improvement over the course in all but one case.

	Precourse Test	Postcourse Test	Total
Immediate Test			
Specific items	47.00	49.00	48.00
Elaboration items	50.00	55.00	52.50
Translation items	40.00	45.00	42.50
Total	44.60	48.30	46.50
Delayed Test			
Specific items	27.00	33.00	30.00
Elaboration items	47.50	70.00	58.80
Translation items	41.00	38.00	39.50
Total	36.30	41.30	38.80

Table I: Percent Items Correct on Pre- and Post- Course Tests

An analysis of variance of scores on the test was carried out, and the results listed in Table II.

	F. ratio	d.f.	p
Course	6.38	1	.025
Test items	14.85	2	.005
Test passages	9.16	1	.005
Tests	2.73	1	N.S.
Course x test items	1.73	2	N.S.
Course x test passages	8.79	1	.025
Test passages x test items	12.82	2	.005
Course x test passages x test items	15.69	2	.005
Course x test items x tests	8.66	2	.005

(Note: Variability between students taken as error variance.)

Table II: Analysis of Variance of Pre- and Post-course Test Scores

As can be seen there was a slight but significant improvement in performance over the course. More significantly, performance over the question types and the passages differed; elaboration items were found easiest, specific-knowledge items hardest, and passage B more difficult than A. This first finding, that question types vary according to their difficulty, confirmed one of our expectations, namely that only an initial processing of the passage might be achieved in a ten minute reading. Interestingly, this initial processing appears to conform to a deep-level rather than a surface-level understanding of the passage (12). In this sense, superior performance on elaboration questions indicates that the initial learning outcome of studying the passages was an understanding of what it was the author had to say, rather than the way he said it and the terms that he used. Unfortunately, it is not possible to say whether this superior performance was a result of the way in which students had defined the task (9), or the more general finding that semantically coded information is forgotten less rapidly than phonemic information (13).

An unexpected finding was that significant three-way interaction effects obtained between the passages, the question types, the time of the test, and the course. The first of these interactions may be clearly seen in Fig. I., where performance on the elaboration and translation items in passage A is not only superior but improves dramatically in comparison to passage B.

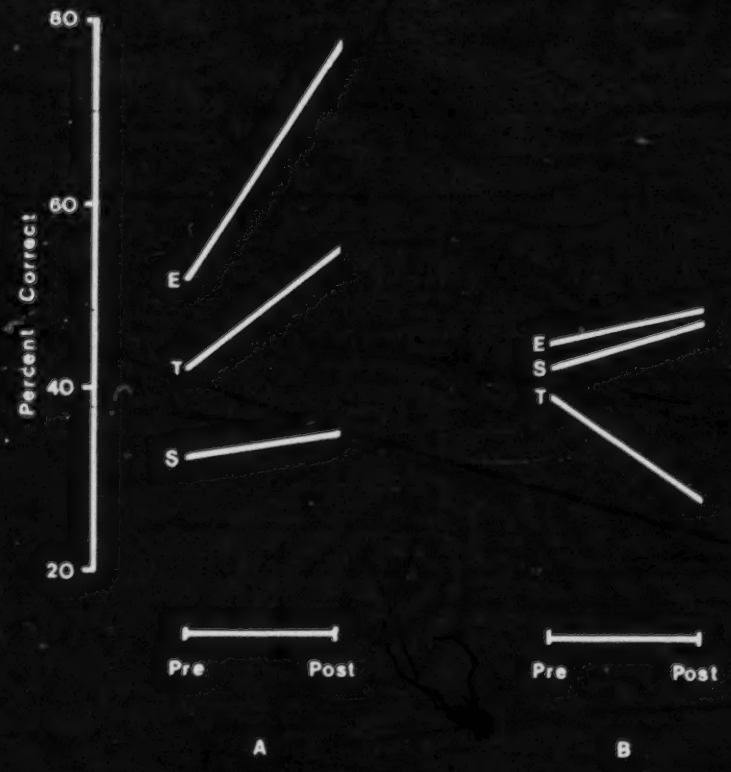

Fig. I: Performance Before and After the course on Test Passages A and B.

On the other hand, performance on specific-knowledge items in passage B appears slightly superior before and after the course of those of passage A.

This difference between the two passages was thus an important one. Passage A was brief but fairly detailed review of a number of experimental tests of Miller's "chunking hypothesis" of human information processing (13). Most readers reported that whilst the terminology was non-technical, the concepts conveyed were often abstract and elusive. In contrast, passage B was a detailed technical account of programming techniques for producing taxonomies and classifications. Readers reported that although the ideas conveyed in this passage were more tangible, the jargon, acronyms and abbreviations were often impenetrable. The effect of the course thus appears to enable a superior deep-level understanding of abstract material at the price of no improvement in understanding of any sort of more technical material, despite the efforts of the trainer to draw the student's attention to the text itself, to the manner in which information density varies through the text and to memorisation strategies. Whilst deep-level understanding may be a desirable outcome for arts and social science students, students of pure and applied sciences seem justified in finding the course less than adequate for their learning tasks.

The second interaction, between time of testing, question type and the course raises another interesting point. It was expected that performance on the delayed tests would be markedly inferior to that on the immediate tests. In fact, this was not the case, and the reason is clear (see Fig. II).

Although at the start of the course performance on specific-knowledge items and, to a mild degree, elaboration items was superior in the immediate test, the effect of the course was to produce a remarkable improvement on elaboration items in the delayed test. This as we have seen is largely attributable to the nature of passage A. We have taken this to indicate that methods presented in the course aimed at improving comprehension and extrapolation from abstract rather than technical material had considerable effect, this effect being more pro-

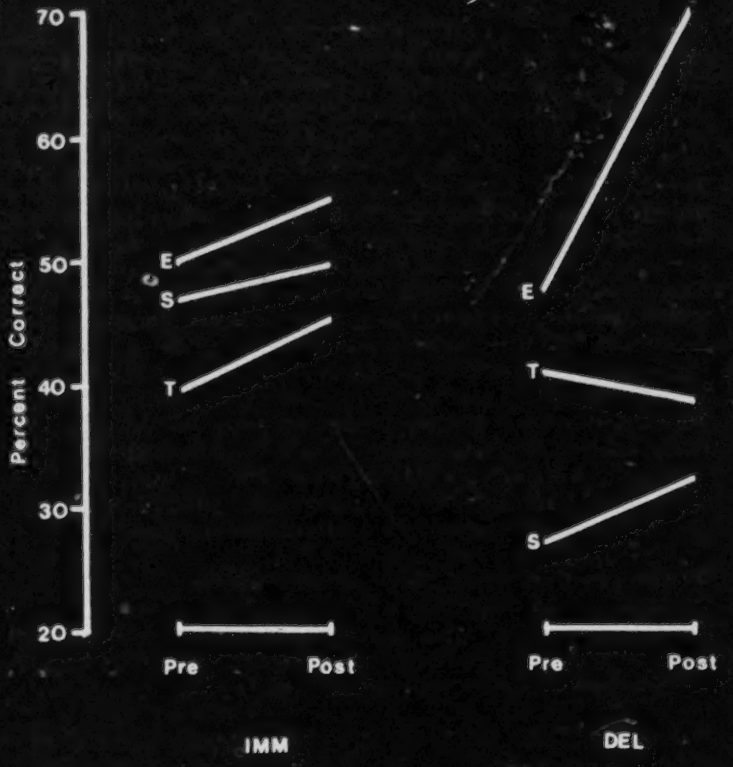

Fig. II: Performance Before and After the course on the Immediate and Delayed Tests.

nounced on delayed rather than immediate retention. It is worth noting, however, that the ability to translate conceptual material from one written form to another in the delayed test did not improve. We attribute this to the notion that translation questions test lexical (surface-level) abilities rather than the appreciation of ideas, and as most students on the course were not familiar with either the jargon of psychologists or computer programmers they could not be expected to remember a great deal of it from a single reading.

In summary, the outcomes of the course in student's performance on these somewhat arbitrary tests do indicate that the treatment of some subskills had a measurable effect. The course might then be recommended to students with the caveat that these effects have not yet been tested over longer intervals, and that they obtain only for deep-level comprehension of the class of abstract rather than technical written material.

In addition to the tests, 20 students completed pre and post-course questionnaires, consisting of a randomised sequence of thirty pairs of positively and negatively worded statements, ranging from items such as "I feel dissatisfied with my ability to study" to "I move my eyes flexibly over a text". Students responded by marking on a five-point Likert scale the frequency with which such a statement might be true of their study habits. For analysis purposes ratings on the item pairs were combined and the scores transformed to a nine-point ordinal scale. A principal components analysis was then carried out (15) on the pre-course questionnaires. Owing to large variations between statement pairs, quite a few components emerged. Although accounting for only half the total variance, the first four components had sufficient face validity to be readily identifiable. The five highest loading scales for each of the first four components are listed in Table III.
The first set of scales clearly denotes particular reading subskills, and so for convenience we have labelled the component Process. The second set, denoting the adaptive deployment of subskills, we have labelled Strategy. The third set, denoting visual, factual, and conceptual memory, we have labelled Retention. The fourth set, denoting the conditions under which

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Table III: Principal Components Analysis of Precourse Questionnaire

Component	Variance	Scales	Loading
I "Process"	22.47	Attention span	+ 9.48
		Reading speed	+ 9.21
		Notemaking whilst reading	+ 6.73
		Generating hypotheses whilst reading	+ 6.01
		Visualising the text	+ 4.53
II "Strategy"	15.92	Vary reading speeds	−7.12
		Vary reading patterns	−7.00
		Multiple reading patterns	−6.74
		Vary notemaking strategies	−5.13
		Vary memorisation strategies	−4.23
III "Retention"	9.74	Eye movements	+ 5.99
		Visual memory	−5.28
		Selecting keywords	−3.69
		Factual memory	−3.66
		Conceptual memory	−3.42
IV "Purpose"	7.97	Ignoring distractions	−4.18
		Ignoring personal problems	−3.96
		Relaxing	+ 3.52
		Revising notes	−3.11
		Confident	+ 2.94

(Note: Components are represented by five highest loading scales only.)

studying is done, we have labelled Purpose. Positive loadings indicate a systematic bias towards the less favourable pole. As is evident, the principal concern of these students was to develop subskills adequate to their learning tasks, although they were more satisfied with their strategic use of sub-skills and their ability to retain learned information. It is interesting to note, however, that in the fourth component being able to ignore distractions and personal problems implied not relaxing and not feeling confident. An analysis of variance was carried out on the scale ratings for each of the four components prior to, and after, the course, and the results are listed in Table IV.

	F. ratio	d.f.	p
Course	46.76	1	<.005
Components	17.23	3	<.005
Course x components	1.63	3	N.S.

(Note: Variability between — students/between — administrations taken as error variance.)

Table IV: Analysis of Variance of Ratings on Components I to IV in Pre- and Post-course Questionnaires.

Overall, all four components showed significant improvements over the course. In addition, the components differed significantly in their mean scale positions.

It may be seen in Fig. III that the Strategy and Retention components are biassed in a favourable direction prior to the course, the Process and Purpose components in unfavourable directions, but that after the course all four components swing towards the favourable pole. One possible interpretation of this swing might be a form of "Hawthorne effect", in that the simple act of paying attention to student's learning problems may bring about a real or apparent improvement. In addition, it is important to bear in mind that what a student thinks he does may not completely correspond with his actual performance, as was evident in the Thomas and Augstein (8) studies of reading skills.

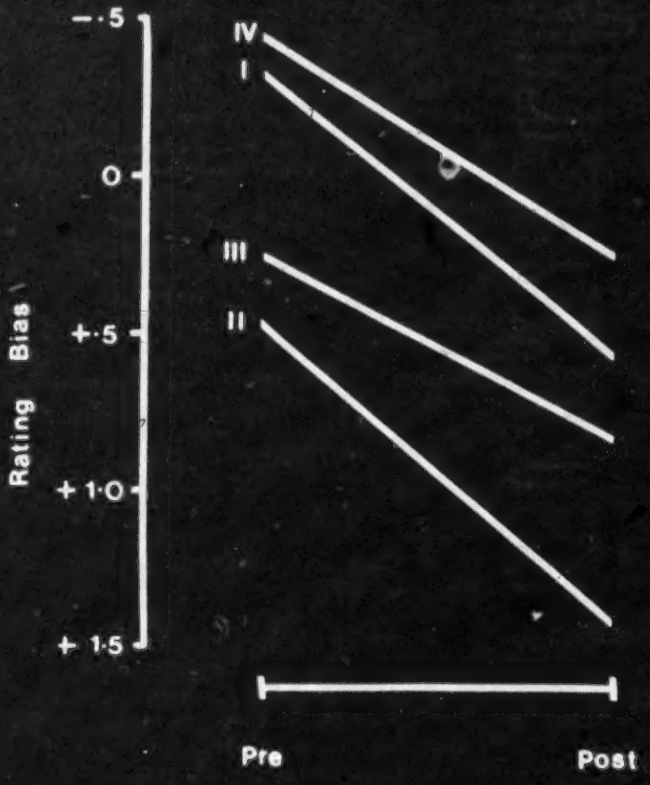

Fig. III: Ratings of Components I to IV Before and After the course

When examined in more detail, however, this swing is not completely uniform. Whilst some students display clear gains on the scales, other students show sizeable decrements. To illustrate this lack of uniformity we have plotted each student individually on the Process and Strategy components in Fig. IV.

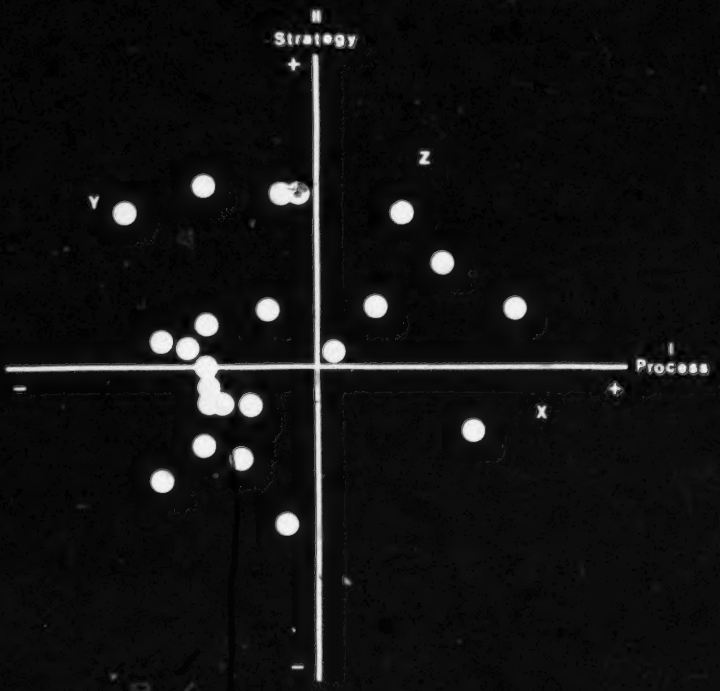

Fig. IV: Dispersion of Students in Component Space I/II Prior to the course

Clearly, there is considerable dispersion at the start of the course, some students fairly satisfied with their studying (those in the upper right quadrant) and a cluster of students a little less than satisfied (those in the left and lower quadrant). When their movement on these scales over the course is indicated (see Fig. V) a striking trend for convergence onto the most favourable quadrant is evident. There are exceptions, however, and these seem to me to illustrate two important points in a component skills approach to studying.

On a closer inspection, we see that some students gain on one scale but lose out drastically on another, or again lose out on both scales. In fact, there is a near zero correlation between the extent of change on these two components ($r_s = .003$). Consider the three students, X,Y and Z in Fig. V. The movements of each of these students lead to separate inferences about change processes occurring during the course. Student X for example, feels that an increase in the flexibility with which he applies various subskills and methods was coincident with a drop in his performance on these subskills. In Miller's terms, "a plan is flexible if the order of execution of its parts can be easily interchanged without affecting the feasibility of the plan" (10, p. 120). For student X, however, this increased flexibility appears to him to detract from the functioning of parts of the plan, a situation that Miller refers to when changes in higher-order strategies of studying pose a sizeable threat to the student, leading him to retain fragments of his original plans even though they may now be inappropriate.

By way of contrast, student Y's gains in tactical processes in studying are coincident with an apparent decline in the flexibility with which they are deployed; this suggests that student Y has devoted most of his attention to the mechanics of various tactics and methods of studying, but is unable, or is not yet able, to integrate them into a plan capable of adapting to varied studying tasks.

Finally, student Z has apparently suffered a decrement in both processes and strategies for studying, perhaps indicating the temporary disruption of plans that is a necessary feature of skill

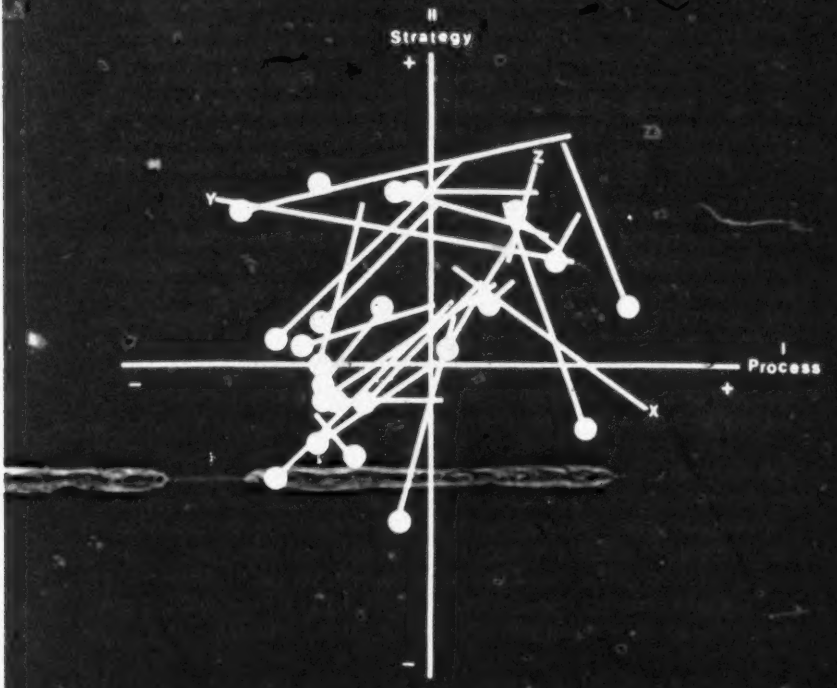

Fig. V: Movement of Students in Component Space I/II After the course

modification. Taken together, these three students suggest that there may be a number of responses to the immediate effects of the course; a more conclusive study of these responses must wait until the follow-up surveys have been completed.

In summary, the questionnaire surveys indicate that students identify their weaknesses in the area of individual subskills and in reading in particular, and that to some extent the course meets these demands. It is not clear, however, to what extent the course leads to a real or apparent improvement, and there are signs that gains in some areas do not necessarily correspond to gains in other areas, and even that the immediate outcome of the course might be an apparent decline in studying performance.

What light do these preliminary investigations shed on our theoretical misgivings about the course? The first criticism, that the course does not meet individual student requirements cannot be entirely supported from our data. However, we can say that the methods presented do not at first sight appear to be appropriate to pure and applied science students, and that this reflects the limitations of courses structured around the plans of the trainer, rather than around procedures by which students generate their own plans for studying.

The second criticism, that the course does not enable the student to adapt his component skills to varied learning tasks is partly supported by the finding that gains occur for a limited set of activities on a specific class of material, and do not seem *immediately* to transfer to other activities or materials. Again, there are some indications that improvements in some aspects of studying are not coincident with improvements in other aspects.

Our third and final criticism, that the course seems not to make allowances for a temporary decline in performance is again difficult to support from our data, which has shown significant gains in performance in some activities immediately after the course, and for the majority of students a gain in apparent performance. Some students do, however, appear to have made some decrements, but it is again to the follow-up survey that we must look for clarification here.

As a final note, we have gone ahead at Plymouth with some modifications of the course, intending to provide a context for students to generate their own plans for studying. We have, for example, concentrated on providing explanations of component skills, on the one hand comprehensive and on the other discursive and open-ended. Again, we have employed simple games for explaining and sharing personal constructions (16) of a variety of topics, with the aim of assisting students to develop and refine their perceptions of studying problems, contexts and purposes.

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Course Questionnaire

Date

Name Course/Year

Below are 60 simple questions which are intended to evaluate the Advanced Learning and Reading Course. Answer each question by circling the appropriate letter on the right hand side of the page. The letters represent the following answers:—
A = always O = often S = sometimes R = rarely N = never
Answer each question as honestly and as quickly as you can.

1.	I scan through a text before reading it	A	O	S	R	N
2.	I keep my notes as I first write them	A	O	S	R	N
3.	When reading, I take in many words at a glance	A	O	S	R	N
4.	I feel disappointed with my academic abilities	A	O	S	R	N
5.	I find it difficult to change my study habits	A	O	S	R	N
6.	Making notes interferes with my reading	A	O	S	R	N
7.	I feel tense when I am studying	A	O	S	R	N
8.	I tend to forget graphs and diagrams	A	O	S	R	N
9.	I take in a text a word at a time	A	O	S	R	N
10.	I select those facts from a text that are relevant to my purpose	A	O	S	R	N
11.	I feel confident when I am studying	A	O	S	R	N
12.	I tend to miss the main ideas in a text	A	O	S	R	N
13.	I lack self-discipline in my studying	A	O	S	R	N
14.	I tend to forget the specific facts in a text	A	O	S	R	N
15.	I read slowly	A	O	S	R	N
16.	I anticipate what I am going to read in the next sentence	A	O	S	R	N
17.	I tend to forget the main ideas in a text	A	O	S	R	N
18.	I have difficulty visualising a text after I have read it	A	O	S	R	N
19.	I can ignore distractions when I am studying	A	O	S	R	N
20.	I read in different ways for different purposes	A	O	S	R	N
21.	I feel dissatisfied with my ability to study	A	O	S	R	N
22.	I read each text in one way only	A	O	S	R	N
23.	I use a variety of methods to help me remember	A	O	S	R	N
24.	I stumble over long sentences	A	O	S	R	N
25.	I make notes in different ways for different purposes	A	O	S	R	N
26.	I tend to miss the specific facts in a text	A	O	S	R	N
27.	I question what I read	A	O	S	R	N
28.	I feel confident of my academic abilities	A	O	S	R	N
29.	I am able to visualise a text after I have read it	A	O	S	R	N
30.	When reading, I tend to dwell on unnecessary detail	A	O	S	R	N
31.	I read fast	A	O	S	R	N
32.	I feel satisfied with my ability to study	A	O	S	R	N
33.	I plan my reading	A	O	S	R	N
34.	I revise my notes regularly	A	O	S	R	N
35.	I read every text at the same speed	A	O	S	R	N
36.	I move my eyes flexibly over a text	A	O	S	R	N
37.	I feel anxious when I am studying	A	O	S	R	N
38.	I easily remember the main ideas of a text	A	O	S	R	N
39.	I make notes roughly and quickly	A	O	S	R	N
40.	I read a text from start to finish	A	O	S	R	N
41.	I easily remember the facts of a text	A	O	S	R	N
42.	I can put aside personal problems when studying	A	O	S	R	N
43.	I read each text in a number of ways	A	O	S	R	N
44.	I use a standard method of revising for exams	A	O	S	R	N
45.	I accept what I read	A	O	S	R	N
46.	Making notes helps my reading	A	O	S	R	N
47.	I find it easy to change my study habits	A	O	S	R	N
48.	I look for specific facts in a text	A	O	S	R	N
49.	I concentrate only on the sentence I am reading	A	O	S	R	N
50.	My notes are cluttered with unnecessary detail	A	O	S	R	N
51.	I feel relaxed when I am studying	A	O	S	R	N
52.	I read every text in the same way	A	O	S	R	N
53.	I can easily remember graphs and diagrams	A	O	S	R	N
54.	I take a text as it comes	A	O	S	R	N
55.	Personal problems affect my ability to study	A	O	S	R	N
56.	I read at different speeds for different purposes	A	O	S	R	N
57.	I am able to regulate my studying	A	O	S	R	N
58.	I am easily distracted when studying	A	O	S	R	N
59.	I look for the main ideas in a text	A	O	S	R	N
60.	I use a standard method for making notes	A	O	S	R	N

Developing a Study Skills Course
by Liz Rees (Kingston Polytechnic)

Since 1974, in direct response to the demand from both staff and students, pilot Study Skills Courses for first year students have been in operation at Kingston Polytechnic. It has been the concern of the research team to meet this demand as effectively as possible within the six weeks period allowed to any such single course.

The intention of the first part of this paper is to give a brief description of the form that the first two courses took, including the criticisms and feedback which led to the current course now in operation at the Polytechnic.

The First Study Skills Course

Groups:

1. Computer Science Degree Course.
   Twenty-five first year students.

2. Higher National Diploma — Chemistry.
   Fifteen first year students.

There were six sessions, two hours in length for both groups.

Background

Before deciding upon any specific objectives we read the information available on student progress and consulted the various sources of advice on effective study skills. An analysis was made of a selection of study guides commonly used by students: Robinson, Rowntree, Hill and Guinery. The texts are basically similar in their approach to the skills necessary in higher education, and fairly consistent in the range of remedial techniques offered. The team decided to use these texts as a basis from which to work. However, we did have certain criticisms:

1. The texts failed to acknowledge that if a student had reached the level of higher education, then he had at least some system of learning which was fairly effective.

2. A set of skills different from those found successful at school might be called upon when a student enters higher education, see Wankowski, 'Disenchanted Elite', *Motivation non-cognitive aspects of student performance* S.R.H.E. 1972.

3. Little attention was paid to the way in which desirable study techniques might be acquired. The assumption was that they would be acquired simply by reading and memorising.

4. No attention was paid to the specific skills necessary within particular subject areas.

In designing the course we attempted to meet some at least of these criticisms.

Course Structure

Session I – 'Learning at the Polytechnic'.
This concentrated on identifying the study problems that may occur when students enter higher education and presenting advice and support. The first session introduced the students to what we meant by 'study skills', and told what they could expect from the course.

Session II – 'Organisation'.
This specifically emphasised 'self-organisation' and the forms it can take, e.g. allocation of study time, time budgeting, study timetables, etc.

Session III – 'Effective Reading'.
This was based on the Brunel Reading Scheme ('How to Research Your Own Reading', Augstein and Thomas, 1972). The session emphasised the importance of 'flexibility' and encouraged the

students to think in terms of reading purpose, appropriate strategy, and learning outcome.

Session IV – 'Problem solving'.
This session was led by a lecturer from the students' subject area, using a course assignment.

Session V – 'Survey, Question, Read, Recall, Review'.
A general approach to reading and how this study technique could be used.

Session VI – 'Writing'.
A discussion of the various writing tasks demanded by their course. A final discussion of how the students responded to the idea of a Study Skills Course.

The course design did not provide adequately for structured feedback. The information gathered from the students concerning their various study problems, thoughts and suggestions about the Study Skills Course came from group discussion, and the individual session spent on the Brunel Reading Machine, plus the Study Habits Questionnaire compiled by the team (see page 33). In the light of such discussion we arrived at the following conclusions.

Conclusions

1. Presenting a range of 'good' study skills and hoping that some students would be interested enough to go on using them was not sufficient.

2. There was a gap between the students' needs (as they saw them) and our course design. For example, a typical response was, 'how can you assess our needs when you are not a Chemist or a Computer Scientist?'.

3. A general problem was that students had such heavy course commitments that they found it difficult to give much time or energy to trying out or developing study

techniques. These criticisms pose the questions, "What real help are we able to offer during a six week course with no time available for constant personal supervision?"; "Are we, the team, setting our expectations from both the course and the students too high?". The second course hoped to take a more realistic approach in catering for the students' specific needs.

The Second Study Skills Course

Groups:

1. Higher National Diploma — Physicists and Chemists.
   Twenty-five first year students.

   Four sessions in the first term and six sessions in the summer term.

2. Civil Engineering, Degree course.
   Forty first year students.

   Six sessions in the first term.

3. Computer Science Degree Course.
   Thirty first year students.

   Six sessions in the first term.

Each group was divided into two sub-groups: a teacher-directed one, and a self-directed one (this will be elaborated on during the following account).

In re-designing the Study Skills Course, the team decided:

1. To concentrate on developing a more flexible and informal approach.

2. To offer the students greater opportunities for activity, in the form of individual exercises and group discussion (a less didactic approach).

3. To concentrate more on sensitising the students to a range of possible alternative methods for effective learning, with time to explore the relevance to themselves of the suggested techniques.

4. To relate each relevant area of studying to basic principles associated with effective learning.

5. To encourage a more flexible approach to learning.

Course Structure

As mentioned previously, each group was split into sub-groups; a) teacher-directed, b) self-directed. We hoped to discover by this whether the students preferred to work independently through prepared Units, or favoured a more traditional approach of lecture plus discussion.

The texts produced by the team were formed into Units, each Unit covering an aspect within the area of Study Skills ('Learning at the Polytechnic', 'Notetaking and Notemaking', 'Reading to Learn', 'Problem Solving', 'SQ3R', 'Attitudes and Approaches to Study').

These Units were designed to instruct the self-paced students in selected skills and techniques, with appropriate exercises to measure their efficiency in that skill. It was hoped that these Units would promote a degree of self-awareness and activity on the part of the student, rather than a passive reading on effective study skills.

The teacher-directed group received its instruction in the form of a short lecture, of about fifteen minutes in length, based on one of the Units. Each session was devoted to one of the Units. The session was divided as follows:— (i) the lecture, (ii) illustrative exercises, (iii) discussion (an opportunity for the students to consult and collaborate with the tutor and fellow students). The nature of the feedback was as follows: (i) responses from the Study Habits Questionnaire (see page 8),

(ii) completed exercises, (iii) notebooks given each student to write up comments and criticisms, (iv) the order in which they were working through the Units.

Conclusions

1. The approach with the teacher-directed group was too unstructured, and there was still too little 'active' participation from the students regarding the various study techniques.

2. The time given to discussion did much to open up the area of effective learning, but did little to activate the students on any long-term basis towards adopting effective learning methods.

3. The self-directed group disliked the lack of staff involvement, and found working on their own, surrounded by the rest of the class, too inhibiting. Comparing themselves to the teacher-directed group, they felt themselves to be experimental fodder.

However, on the positive side, we are able to feel that the students, by being sensitised to the area of study skills, were beginning to develop a sense of themselves as learners and develop an ability to assess their performance as learners. We felt that our conclusions were consistent with the views of such psychologists as Rogers, Bannister and Cronbach; that change if it is to be meaningful must be worked out by oneself; and that alternatives presented must seem worthwhile.

The Third Study Skills Course

Groups:

1. Higher National Diploma — Physicists and Chemists. Twenty-five first year students.

   Five sessions of two hours in the first term, then six sessions in the summer term.

2. Computer Scientists Degree Course.
Forty-four first year students.

Six sessions of two hours during the first term, plus additional weeks for basic communication skills.

3. Quantity Surveyors Degree Course.
Thirty-five first year students.

Eleven sessions of one hour.

4. Civil Engineering Degree Course.
Thirty-five first year students.

Six sessions during the Easter term, two hours in length.

This course involved a greater degree of 'activity' for the students, both in the form of exercises and in opportunities for self-diagnosis, plus an increased emphasis on providing opportunities for the student to assess his own current study habits.

The team had been gradually progressing towards this emphasis on self-awareness. We also felt that the students were unlikely to completely throw over their familiar ways of working. Change was more likely to occur in a piecemeal fashion by a gradual process of negotiation. Initiating this process of self-awareness and negotiation was a lofty goal, and we certainly did not expect total success from a six week course. However we felt that it was the responsibility of the course to provide opportunities for self-diagnosis as a learner. The student would then be in a position to formulate his own course of action from the opportunities and alternatives presented within the course.

Our intention was to start a developmental process which might lead to one of several end products, all equally valuable in terms of effective learning, but different for different students (cf Entwistle*).

**N.J. Entwistle and T. Brennan 'The Academic Performance of Students II' 'Types of Successful Student' B.J.E.P. 1971 Vol. 4 pp. 268—276.*

The Structure of the Course

In order to present the students with adequate opportunities for evaluating themselves as learners, the course was more highly structured; less time was given to group discussion, and more towards student assessment of existing study habits. This necessitated the production of relevant exercises, materials, etc, in an attempt to provide the necessary stimulus. At all stages, liaison with the course tutors was necessary in the production of subject specific materials; and over the three years a spirit of cooperation developed between the team and the course tutors.

This emphasis on self-awareness and allowing the student to work out his own methods of studying was a complete reversal from the earlier 'text-book' approach of memorising and recalling a range of suggested study techniques. The tutor's role was to be one of 'catalyst' rather than teacher/expert in study skills, thus emphasising the student's ability to judge and explore for himself. The student may well be the best expert on himself, once he is presented with the possibility of evaluating his performance, in an informal situation. Developing this critical awareness was the object of the course.

This course differed from the two previous ones in that more structured provision was made for evaluation, which was included in each session. In addition, a Questionnaire was administered before the first session and at the end of the last session. The course structure was followed by structured interviews which sought to probe behind the responses to the Questionnaire, and get a better picture of the students' responses to the course.

The accompanying diagram indicates for each session the nature of the evaluatory tool used.

The Evaluatory Tools

1. Questionnaire: In a pilot study, a 152-item questionnaire was given to eighty-four students. From this, study items

were selected to construct two equivalent 40-item questionnaires (A and B) to measure the students' study skills. These were administered to students before and after the course, as shown in Figure 1.

Fig. 1

A	Study	B
B	Skills Course	A

2. Self-diagnosis: A printed sheet of questions requiring the student to examine his methods and approaches to learning. This task was designed to initiate the process of self-awareness. But since it was both at the beginning and at the end of the course in a form which permitted comparisons, it served then as a measure of evaluating both growth in self-awareness and also the course itself.

3. The 'Comments' Sheets: These were administered at the end of every session; an opportunity for the student anonymously to comment and criticise the design of the session.

4. A completed timetable on which the student included course commitments, study time, time involved in travel, cooking, etc.

5. Exercises, and the notes for the set essay, and notes taken during 'the lecture'. These were primarily of use to the learner.

6. Interviews: Conducted by people not involved in the running of the course.

This is an on-going course and the analysis of the effects of the course is also continuous. Details of further analysis may be obtained from the author.

Appendix

The Course Objectives

1. To sensitise students to study methods in general.
2. To focus sensitisation on particular areas.
3. To provide opportunities for self-diagnosis.

Each session includes: Objectives, Content and Evaluatory Tools, plus a back-up handout.

Session 1

Objectives:

1. To introduce the course.
2. To explain its purpose and what is required of the students.
3. To start the process of self-diagnosis.

Content:

1. Introductory talk ('What do we mean by study skills?').
2. Half Questionnaire.
3. Discussion (to serve as a prompt for self-diagnosis).
   - i. To provide opportunity for come-back.
   - ii. To identify relevant areas and to emphasise difference from school.
   - iii. Turn discussion towards self-diagnosis.
4. Self-diagnostic sheet (a collection of questions which require students to think about themselves as learners, and the skills necessary for Higher Education).

Evaluatory Tools:

1. Half Questionnaire.
2. Self-diagnostic sheet.

Session 2: Note Taking

Objectives:

1. To provide introduction to principles of learning.

2. To diagnose levels of skill at note taking.
3. To suggest ways of improving.
4. To practise note taking.

Interested, that is, in two things:—
a. Content of lecture
b. How and how well notes were taken from it.

Content:
1. Live lecture on learning theory.
2. Discussion of note taking techniques with respect to that particular lecture.

   i. The lecturer's model notes are provided.
   ii. A 'dummy' experienced note taker is planted in the group and his notes are made available. These are compared with the students' own notes:—

      a. What are the principles?
         1. Get the structure; 2. Be selective; 3. Tabulate; 4. Abbreviate.

      b. How do you apply principles?
         1. How to get a structure?
         2. How to recognise important bits?
         3. How to tabulate?
         4. How to abbreviate?

Evaluatory Tools:
1. Their actual notes.
2. A 'Comments' sheet given during Session 3. These sheets ask for the students' comments and criticisms of each session.

Session 3: Self Organisation

Objectives:
To assist the students to recognise the importance of self-organisation, and be aware of forms it could take:

i. Planning for the term.
ii. Planning for the week.
iii. Regular ritual, place, etc.
iv. Review of notes.
v. Job list.
vi. Structuring the learning situation to ensure consolidation, feedback, activity.

Content:

1. Buzan's film, 'Getting down to it'.
2. Discussion: extract the form that self-organisation might take, and also relate it to the learning principles.
3. Preparation of a timetable, 'filling in'

   classes
   travel — hence identify time
   food — available for study

   Techniques available:—
   i. Time budgeting.
   ii. Priority setting.
   iii. Job list.
   iv. Leave time for 'rehearsal'.

Evaluatory Tools:

1. Completed timetable.
2. 'Comments' sheet.
3. The questions raised by the students (starting to think about what is meant by self-organisation again, plus self-diagnosis).

Handout:

'Self-Organisation'.

Session 4: SQ3R and Reading

Objectives:

1. To raise the students' level of awareness about how they read.
2. To sensitise the student to the part played by goal identification in reading.

3. To make students aware that there are purposes and strategies.
4. To show a general reading strategy (SQ3R).

Content:
1. Reading exercises to illustrate *different purposes* (exercises taken from science journals).
2. Talk about the Brunel Reading Machines/types of 'read'/purpose, illustrated with examples of 'reads'.
3. SQ3R — relate to graphs.
4. Give book list and assignment question — during the week make notes and then bring notes next week ready to do writing assignment next week. Record sources of notes.
5. Six students start on machines. Remainder — watch or start assignment.
6. Discuss 'reads' with student.

Evaluation:
1. 'Comments' sheet.
2. Student's 'reads', plus answers to questions made out from specific reading texts.

Handouts:
SQ3R Unit.
Assignment questions plus book list.

Session 5: Writing

Objective:
Sensitisation to organisation of writing.

Content:
1. Give subject, e.g. 'Birthrate' — give data and some notes. Jointly as a group discuss essay construction.
2. Applying method to your (student's) notes.
3. Collect in essays, plus notes made.

Assessment: Writing skills.
Writing-up skills (note taking).

Evaluation:

1. Essays.
2. Notes made during week.
3. Department's ratings of essays.
4. 'Comments' sheet.

Handout:
"Writing".

Session 6

Objective:
Evaluate how course relates to student.

Content:

1. Evaluation — introduce what is happening.

    i. Second half-questionnaire plus skill evaluation from self-diagnosis. Do they become more accurate, better, or aware of more skills?
    ii. Interviews.

2. Various activities

    a. All units available:—
    'Problem solving'
    'Exam Technique'
    'Attitude and Approach to Study'
    b. Tape-slide on note making from books.
    c. Reading Machine.
    d. Buzan tapes.

3. Group counselling session.